In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

ListingofClaims

1. (Currently Amended): An AFE (analog front end) device of a LCD controller with adjustable bandwidth filtering functions, the AFE device comprising an input buffer for buffering an analog signal and an ADC (analog-to-digital converter) for converting the analog signal into a digital signal, the ADC having the adjustable bandwidth filtering functions and comprising:

a capacitor for sampling and holding the analog signal; and

a switch module serially coupled to the capacitor, the switch module comprising a plurality of transistor switches coupled in parallel, wherein at least one of the transistor switches is selected as an equivalent resistor according to one of a plurality of selection codes, so as to constitute a filter circuit together with the capacitor;

wherein the one of the selection codes is corresponding to one of a plurality designate filtering bandwidths of the AFE device;

wherein when another one of the selection codes is applied, the designate filtering bandwidth of the AFE device is changed accordingly.

2. (Previously Presented): The AFE device according to claim 1, wherein the selection code is a one-of-N code, and one of the transistor switches is selected as the equivalent resistor according to the one-of-N code.

3. (Previously Presented): The AFE device according to claim 1, wherein the selection code is a thermometer code, and one of the transistor switches is selected, or multiple ones of the transistor switches connected in parallel are selected as the equivalent resistor according to the thermometer code.

4. (Previously Presented): The AFE device according to claim 1, further comprising a switch serially connected to the capacitor.

5. (Currently Amended): An AFE (analog front end) device of a LCD controller with adjustable bandwidth filtering functions, the AFE device comprising an input buffer for buffering an analog signal and an ADC (analog-to-digital converter) for converting the analog signal into a digital signal, the input buffer having the adjustable bandwidth filtering functions and comprising:

a current source; and

a transistor module serially coupled to the current source to form a source follower, the transistor module comprising a plurality of transistors coupled in parallel, wherein at least one of the transistors is serially coupled to the current source according to one of a plurality of selection codes, so as to form a filter circuit;

wherein the one of the selection codes is corresponding to one of a plurality of designate filtering bandwidths of the AFE device;

wherein when another one of the selection codes is applied, the designate filtering bandwidth of the AFE device is changed accordingly.

6. (Previously Presented): The AFE device according to claim 5, wherein the selection code is a one-of-N code, and one of the transistors is selected to be serially connected to the current source according to the one-of-N code.

7. (Previously Presented): The AFE device according to claim 5, wherein the selection code is a thermometer code, and one of the transistors is selected or multiple ones of the transistors are selected to be connected in parallel with each other or one another and then to be serially connected to the current source according to the thermometer code.

8. (Previously Presented): The AFE device according to claim 5, wherein the transistor module has an input terminal serially connected to an impedance.

9. (Previously Presented): The AFE device according to claim 8, wherein the impedance is equivalent to and implemented by a transistor switch.

10. (Currently Amended): An AFE (analog front end) device of a LCD controller with adjustable bandwidth filtering functions, the AFE device comprising an input buffer for buffering an analog signal and an ADC (analog-to-digital converter) for converting the analog signal into a digital signal, the input buffer having the adjustable bandwidth filtering functions and comprising:

a transistor; and

a current source module serially coupled to the transistor to form a source follower, the current source module comprising a plurality of current sources coupled in parallel to each other or one another, wherein at least one of the current sources is serially coupled to the transistor according to one of a plurality of selection codes, so as to form a filter circuit;

wherein the one of the selection codes is corresponding to one of a plurality of designate filtering bandwidths of the AFE device;

wherein when another one of the selection codes is applied, the designate filtering bandwidth of the AFE device is changed accordingly.

11. (Previously Presented): The AFE device according to claim 10, wherein the selection code is a one-of-N code, and one of the current sources is selected to be serially connected to the transistor according to the one-of-N code.

12. (Previously Presented): The AFE device according to claim 10, wherein the selection code is a thermometer code, and one of the current sources is selected or multiple ones of the current sources are selected to be connected in parallel with each other or one another and then to be serially connected to the transistor according to the thermometer code.

13. (Previously Presented): The AFE device according to claim 10, wherein the transistor has an input terminal serially connected to an impedance.

14. (Previously Presented): The AFE device according to claim 13, wherein the impedance is equivalent to and implemented by a transistor switch.

15-27. (Canceled)

28. (Previously Presented): The AFE device according to claim 1, wherein at least two transistor switches have different width-to-length ratios.

29. (Previously Presented): The AFE device according to claim 1, wherein the selection code is generated in response to the designate filtering bandwidth of the AFE device.

30. (Previously Presented): The AFE device according to claim 5, wherein at least two transistors have different sizes.

31. (Previously Presented): The AFE device according to claim 5, wherein the selection code is generated in response to the designate filtering bandwidth of the AFE device.

32. (Previously Presented): The AFE device according to claim 10, wherein the selection code is generated in response to the designate filtering bandwidth of the AFE device.